Experimental Work Planning and Control

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Outline

1. Objective

2. Process

3. Example

1. Experimental Work Planning and Control Objectives

- Encompass all experimental work regardless of who conducts that work (includes Argonne staff, visiting scientists, and users)

- Consistent with LMS documentation, LMS principles, and the LMS RD&E process including the description and mitigation of risk

- Implement a graded approach

- Ensure proper authorization at each step

- Integrate the aspects of training, certification and qualification verification prior to work authorization

- Implement a defined "skill of the research worker" qualification process/standard consistent with the "worker" type designation

- Integrate with other key Lab processes such a procurement, work for others, and field work proposals

- Integrate with existing Permit requirements such that controls implemented in these processes are not duplicated (laser control procedures)

- Define SME qualifications, certification process, training, and the required interfaces with SMEs for WP&C

- Employ a systematic approach (on paper) that can be implemented onto a web-based system, including an electronic signature (authorization) process

Experimental Work Planning and Control Objective: Summary

Hazard control system that implements a graded approach

2. Experimental Work Planning and Control Process: LMS Proc-79

Purpose is to establish the process for planning and controlling experimental work to provide for the health and safety of all Argonne employees, its visitors, the public, and the environment

- Specific process identified for performing experimental work within an Argonne division

- Users at a User Facility follow the local experimental work planning and control process for facility users.

- APS User experiments will continue to use the ESAF process

- At APS, all sector personnel (Beamline Scientists, Science Associates, etc…) will use Experimental WP&C processes
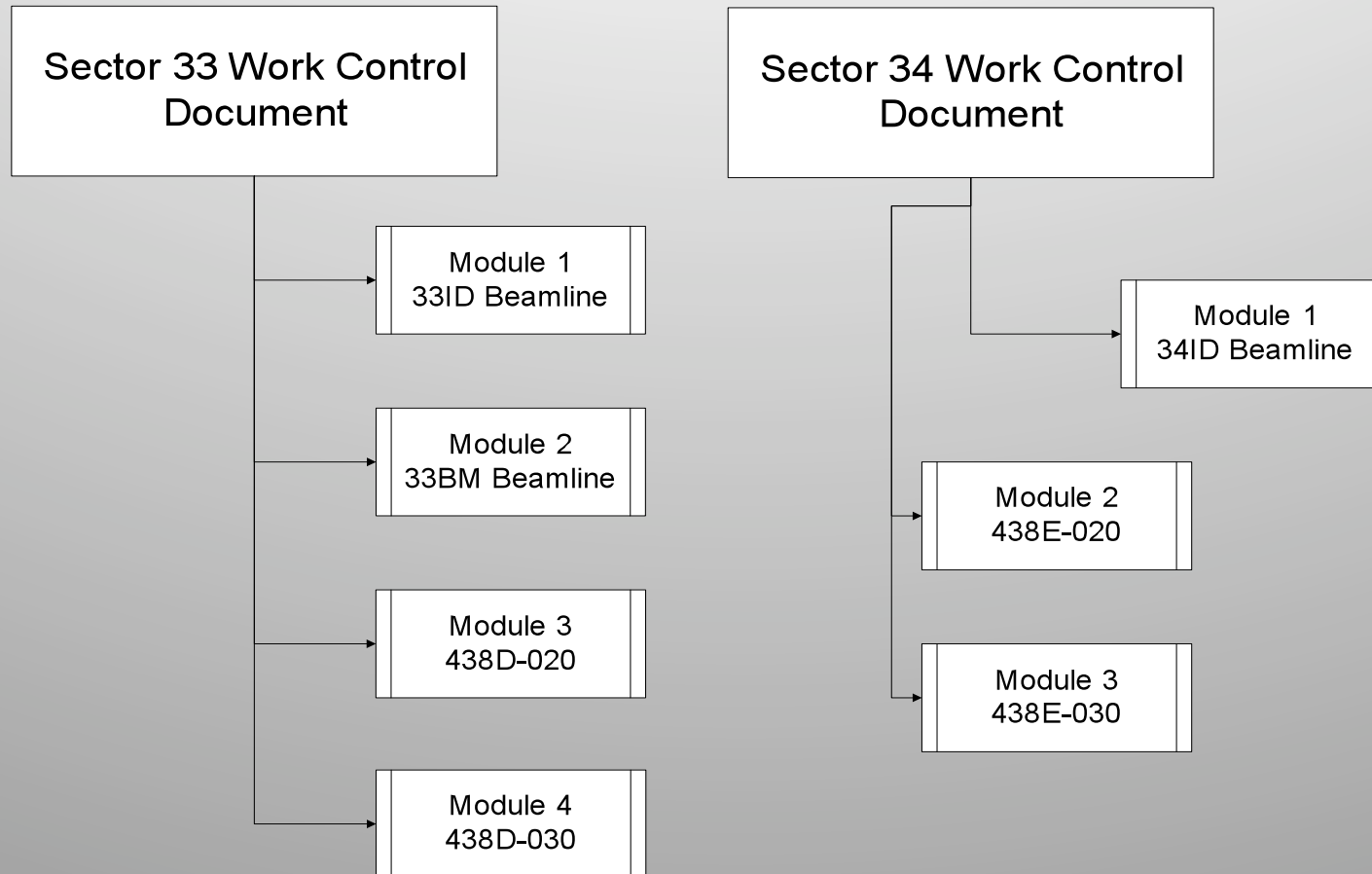
We Would Like to Avoid this Perception

Experimental
Work Planning &
Control
Proc-79

Non-Experimental
Work Planning &
Control
Proc-64

3. Example: Sectors 33 and 34

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┌─────────────────────────┐              ┌─────────────────────────┐
│  Sector 33 Work Control │              │  Sector 34 Work Control │
│        Document         │              │        Document         │
└─────────────────────────┘              └─────────────────────────┘
         │                                        │
         │    ┌──────────────────┐                │    ┌──────────────────┐
         └──► │    Module 1       │                └──► │    Module 1       │
         │    │  33ID Beamline    │                     │  34ID Beamline    │
         │    └──────────────────┘                      └──────────────────┘
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         └──► │    Module 2       │                     ┌──────────────────┐
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         └──► │    Module 4       │
              │    438D-030       │
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For Each Module: Hazard Analysis Screening

PHYSICAL (ANL-817 series)

- N Electrical Work (ANL-817A)
- A Electrical Equipment (If yes:
  - ☐ All NRTL or field inspected
  - ☒ Some Non-NRTL) (ANL-817B)
- N Elevated work (>6 feet) (ANL-817C)
- N Ergonomics (ANL-817D)
- N Fire (If yes:
  - ☐ Open Flame) (ANL-817E)
- A Hand tools (ANL-817F)
- A High pressure (ANL-817G)
- A High or low temperature (ANL-817H)
- A Vacuum (ANL-817I)
- A Hoisting/rigging (ANL-817J)
- A Laser (If yes:
  - ☒ Class 2   ☐ Class 2r   ☐ Class 3a
  - ☐ Class 3b   ☐ Class 3m
  - ☒ Class 4 (ANL-817K)
- N Limited egress (ANL-817L)
- A Machine tools/rotating equipment (ANL-817M)
- N Magnetic fields (Static) (ANL-817N)
- N Materials handling issues (heavy, bulky, hazardous materials handled individually, with manually operated equipment, with powered equipment such as forklifts,

Summary

- Argonne now requires that all experimental work be executed according to a process addressed in LMS-PROC-79

- APS will implement LMS-PROC-79 as a means of addressing the hazards and hazard controls used for beamline operations and use of the laboratories

- ***The ESAF process will continue to be used for experiments***

- Process will continue to evolve as it matures into a robust system and patience and team work is essential to make it a success

Experimental Work Planning & Control Proc-64

Experimental Work Planning & Control Proc-79

Non-Experimental Work Planning & Control Proc-64